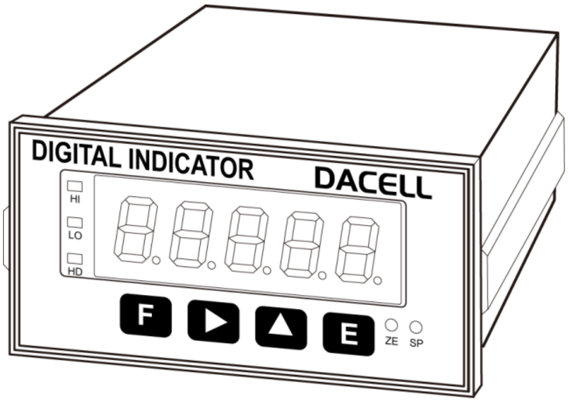
DIGITAL INDICATOR
USER'S MANUAL

DN-10W (VER 5.0)
DN-20W (VER 5.0)
DN-25W (VER 1.0)
DN-30W (VER 1.0)
DN-50W (VER 1.5)



Address : 681-1 Cheoksan-Ri, Nami-Myeon, Cheongweon-Gun, Chung-buk
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http://www.dacell.com
E-Mail : info@dacell.com

Contents

1. Features

We thank you for using our product. Please refer to this manual or contact our office if you find any problems during using our product.

This product is an indicator that emplifies the micro voltage signals from each sensor and display in digital. It is mainly used to measure physical quantities of the items using strain guage such as loadcell, pressure sensor, displacement sensor and torque sensor. This product has the following special features.

1-1. Calibration Method

2 types of calibration systems are adopted. Calibration by actual load (standard weight) and calibration by rated output of sensor .

1-2. Hold & Peak Hold

You can choose peak hold or sample hold .

1-3. Comparison Output

You can do set-up the maxium and lower limit value by the keys on the front panel and output contact point signal of the rear panel.

1-4. Data Back-up

All the set-up values will be memorized on the flash memory so the inputted data can be saved and no need to do the re-setting even in case of the interruption of the electric power or power disconnection.

1-5. Watch dog

This function is for automatic reset in case the system is stopped due to the external factors such as noise.

2. Attention

For the efficient and safe use, please carefully read and be fully aware of the following details before using this product.

It is strictly forbidden to use this product for any other purpose of use or to attempt to make any alteration on this product.

2-1. Attention for installation

- Please keep it out of wet places.
- Do not set it up near vibration & impulse, high temperature and humidity.
  Keep it out of the direct rays of the sun. Set it up where there is less dust, and Keep it out of direct air including salt and ion.
- Do not use when there is inflammable gas or heavy machinery, and smog.
- Ground earth-terminal (⊜).
- Make wire separately from power system wiring and noise wiring.
- Make sure the use of 4 line sealed cable as a sensor cable. Too long cable leads to measurement error due to wiring resistance (around 10meters).

2-2. Attention for use

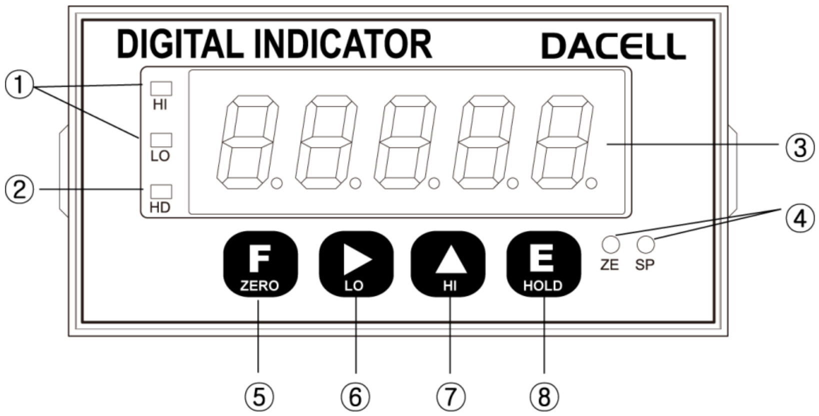
During calibration, Do not input free-load state and real-weight load until it becomes stable. Pressing Enter Key in unstable condition leads to calibration error.

Do not press any Key in use at one's discretion. Please refer to 7. Setting-up mode for the function and method of Key.

3. Specification

Specification model	DN-50W	DN-10W	DN-20W	DN-25W	DN-30W
SIGNAL	1 ~ 3mv/V		0~10V, 4~20mA	0~2Vrms	pulse
ANALOG OUT	0 ~ 10V, 4 ~ 20mA (according to customer request)				
EXCITATION	5V		10V, 24V	2Vrms/5kHz	12V
Available sensor	Strain Gauge sensor (Bridge 120Ω, 350Ω, 700Ω)		Pressure sensor, resistance displacement meter,	Differential trans displacement sensor (LVDT)	PROXIMITY SENSOR (MP-981), **ROTARY ENCODER**
MAX. Display	-19999 ~ +99999				0~60000
A/D Converter	24bit 1000times/sec	16bit 100times/sec			-
D/A Converter	16bit 1000times/sec	12bit			
Temperature Characteristic — ZERO	0.5㎶/℃				
Temperature Characteristic — SPAN	50pm/℃				
Measured value display	7segment LED 14mm				
Status display LED	Red LED 3PCS				
Key Switch	4 PCS				
Comparison output	Hi, Lo, OK OUTPUT (4 relay)				
Contact Capacity	AC250V 5A				
Temperature range for use	-10℃~ 60, >80% RH (No dewing)				
Weight	450g	800g			
Power supply	AC 90~240V 50/60Hz	AC 220V 50/60Hz(AC110V,DC24V: customer request)			
OPTION	OP-01 : BCD OUTPUT, OP-02 : RS232C, OP-03 : RS485 OP-05 : 8 step open collector output				
External dimension	96×48×128 mm (W×H×D)				
Panel cutting size	91.5×44.5 mm				

4. Pront Panel (common feature)



① HI, LO Indication LED

: Hi or LO LED will be lighted when measured value exceeds the setting value.

② HOLD indication LED

: This LED will be lighted when the measured value is on Hold.

③ Measured value Indication

: It indicates the measured value and each setting value.

④ ZERO/SPAN setting up VR

: It is used when ZERO and SPAN calibration of Analog output (DC 0 ~ 10V or 4 ~ 20mA) is carried out.

⑤ 

Measruing Mode : Once this Key is pressed for more than 1 second, the current measuring value will be Zero (0) and the Analog output will be 0V (4mA) as well.

SET-UP Mode : Once this is pressed on the Function Set-up Mode, you will return to the measuring mode.

⑥ 

Measuring Mode : Once this Key is pressed, the lower limit setting value will be displayed and this value also can be changed.

SET-UP Mode : The location of row for the number flickering can be moved.

⑦ 

Measuring Mode : Once this Key is pressed, the upper limit setting value will be displayed and the value can be changed.

SET-UP Mode : The flickering number will be increased by 1 and 1.

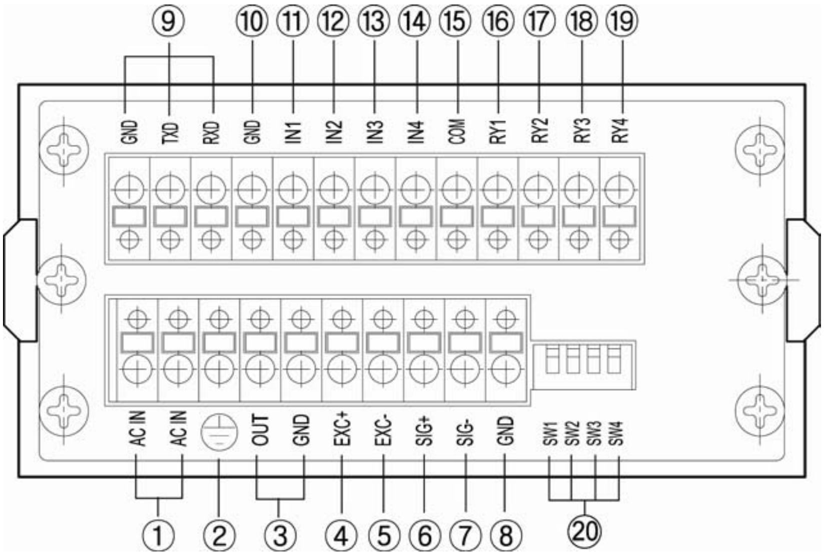
⑧ 

Measuring Mode : Once this Key is pressed, HOLD will be selected and once this key is pressed again, HOLD will be cancelled.

SET-UP Mode : Save each set-up value.

5. Rear Panel (common feature)

Please check the location of terminal and its use. While the projected button is being pressed, please insert the cable into the lower hole completely. As soon as you release the button, the connection will be completed. At the point, please slightly pull the calbe and check whether the cable is come off or not.
(The most suitable calbe is Φ 0.5~1. Linking cable must be brazing or used with I terminal)



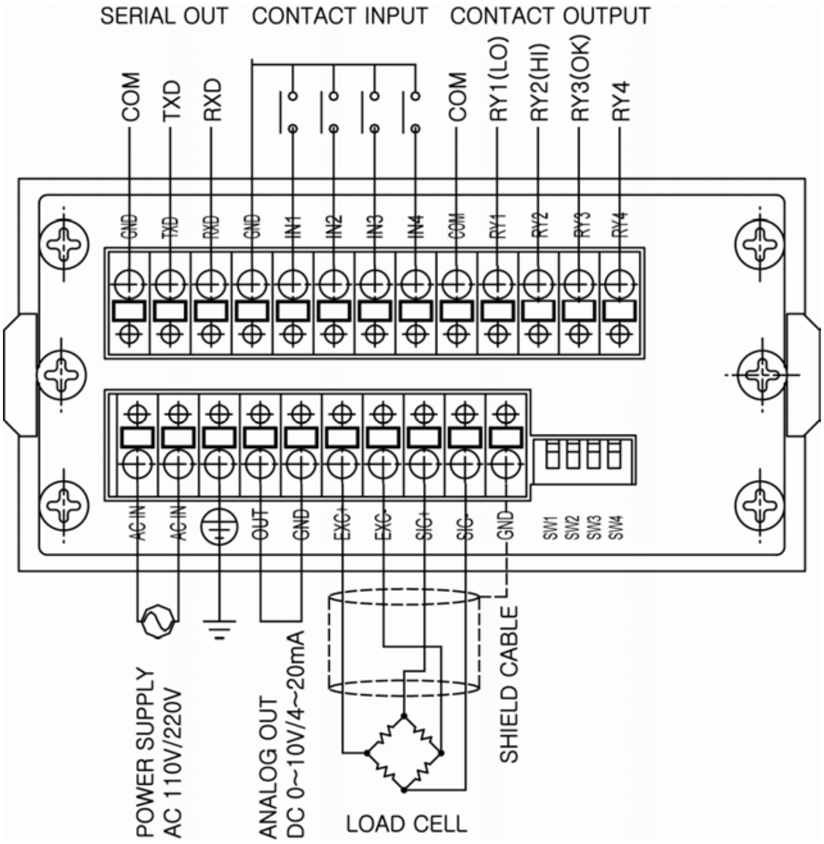
① AC IN : Main Power Supply Wiring Terminal
② ⊜ : Ground Terminal (as an independent ground connection.)
③ OUT : Analog (DC 0 ~10V/DC 4 ~ 20mA) Output Terminal
④ EXC+ : Sensor Supply Voltage + Connection Terminal
⑤ EXC− : Sensor Supply Voltage + Connection Terminal
⑥ SIG+ : Sensor Ouput Signal + Connection Terminal
⑦ SIG− : Sensor Output Signal – Connection Terminal
⑧ GND : SHIELD connection terminal of sensor
⑨ GND, TXD, RXD : RS232C SERIAL INTERFACE (RS485 : TXD → TX+, RXD → TX−)
⑩ GND : External Input Common Terminal
⑪ IN1 : External HOLD Input Terminal
⑪ IN1 : External HOLD Input Terminal
⑫ IN2 : External ZERO Input Terminal
⑬ IN3 : External printer signal Input Terminal (when PT−100 use)
⑭ IN4 : No use
⑮ COM : RELAY Output Common Terminal

⑯ RY1 : RELAY 1(Lower Limit) Output Terminal
⑰ RY2 : RELAY2 (Upper Limit) Output Terminal
⑱ RY3 : RELAY3(Normal) Output Terminal (OK)
⑲ RY4 : RELAY 4 Output Terminal
⑳ ANALOG OUT LOW PASS FILTER Selet Switch
(DN-10W,DN-25W,DN-30W,DN-50W)
SW1 : 10Hz
SW2 : 100Hz
SW3 : 1kHz
⑳ DN-20W Sensor supply voltage & sensor output select switch

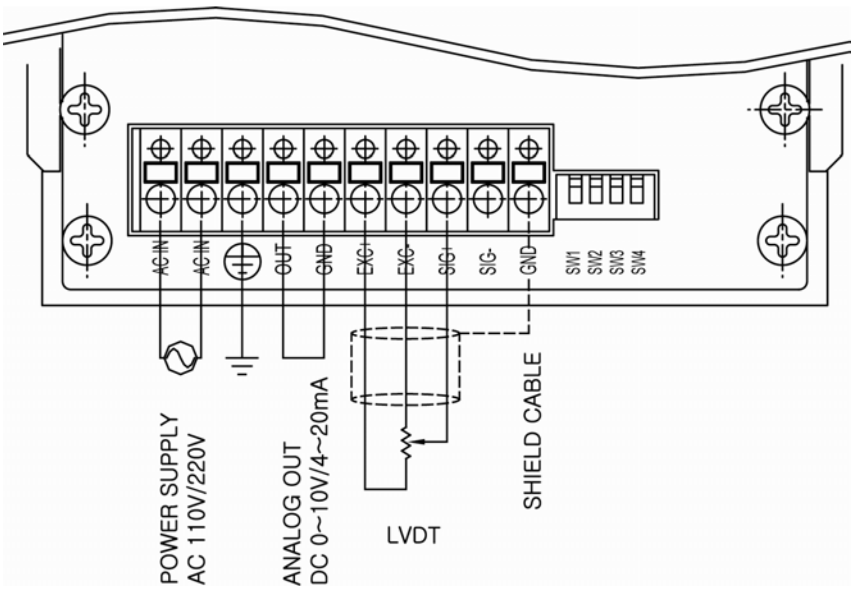
	Sensor supply voltage setting		Sensor output signal setting	
	10V	24V	Voltage type	Current type
SW1	ON	OFF	-	-
SW2	OFF	ON	-	-
SW3	-	-	OFF	ON

6. Wiring Diagram

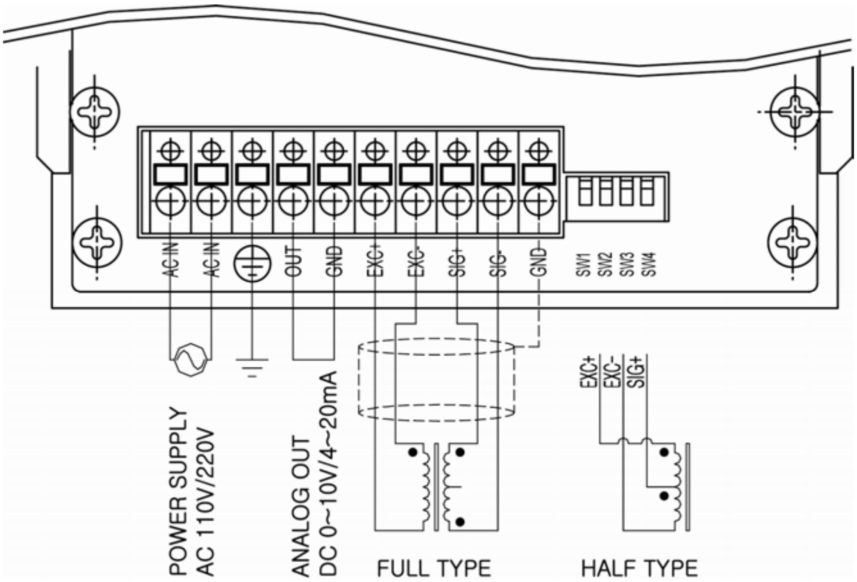
1) DN-10W, DN-50W



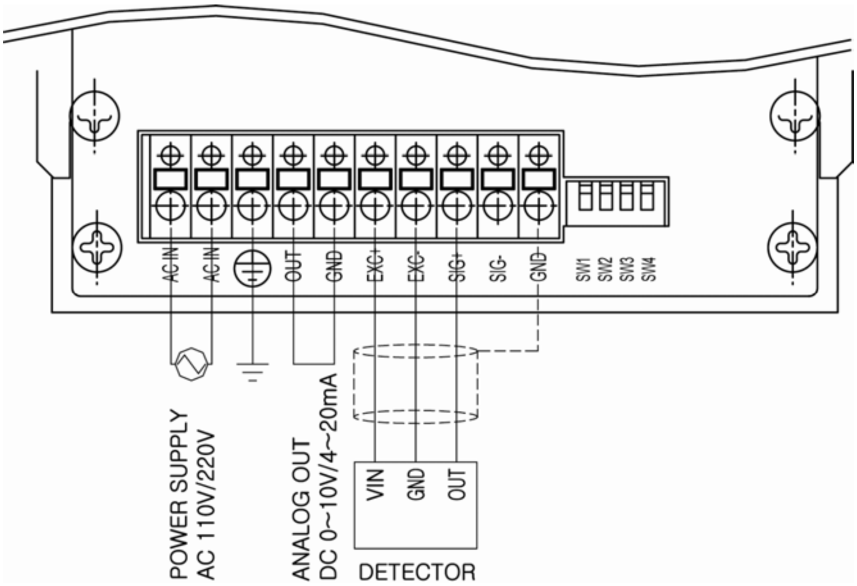
2) DN-20W



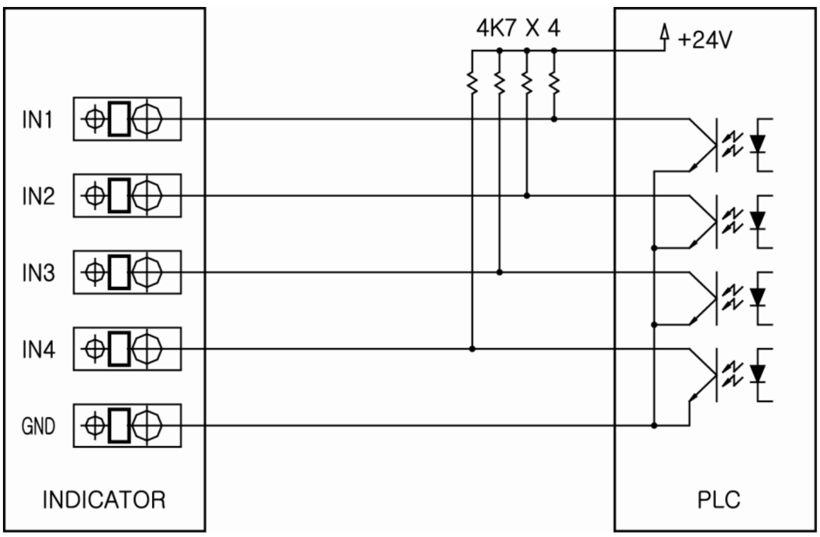
3) DN-25W



4) DN-30W



5) External input PLC connection



7. How to use Hold mode

Hold mode is largely divided into Peak Hold and Sample Hold. Please select Analog, Digital or Display Hold as per your purpose of use (Hi or Low Speed)
To input Hold, you can use Hold key on the front panel or external input. For the operation method, please refer to the drawing below.

DN-10W, DN-20W, DN-25W

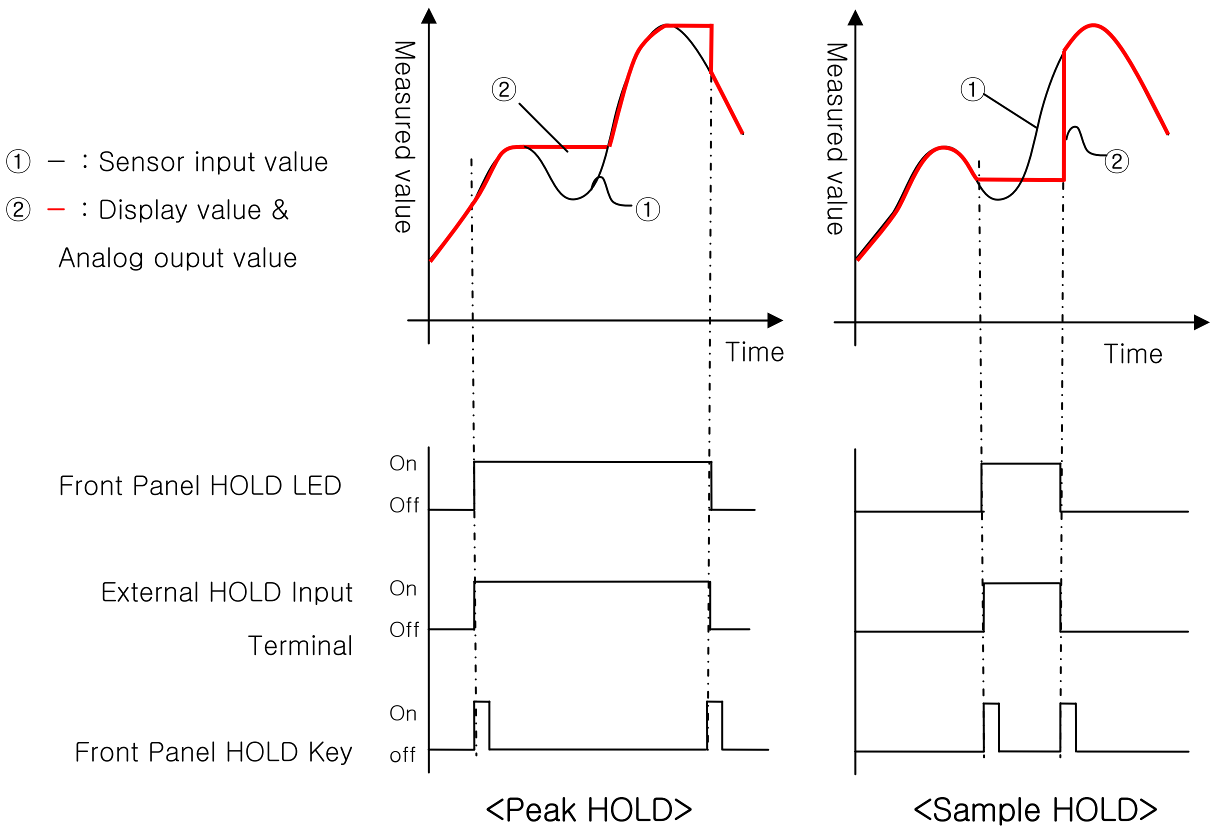
1) Peak Hold : To Hold the maxium value among the measured values.
   Peak hold mode : It is to hold and display the maximum value of (+) direction.
   Absolute peak hold mode : It is to hold and display the maximum value of the absolute value (+/-).
2) Sample hold : It is to hold and display the value at the time of Hold signal input among the measured values.

DN-30W

1) Peak hold : To Hold the maxium value among the measured values.
   · Peak hold mode : It is to hold and display the maximum value of (+) direction.
2) Sample hold : It is to hold and display the value at the time of Hold signal input among the measured values.

DN-50W

1) Peak Hold : To Hold the maxium value among the measured values.
   Analog peak hold mode : It is a high-speed Peak hold. It is to hold and display the maximum value of (+) direction.
   Display peak hold mode : It is a low-sped Peak hold. It is to hold and display the maximum value of (+) direction.
   Absolute peak hold mode : It is a low-speed Peak hold. It is to hold and display the maximum value of the absolute value (+/-).
2) Sample hold : It is to hold and display the value at the time of Hold signal input among the measured values.
   Digital sample hold mode : It is operated by high-speed sample hold.
   · Display sample hold mode : It is operated by low-speed sample hold.


① — : Sensor input value
② — : Display value &
Analog ouput value
Measured value
Time
①
②
Front Panel HOLD LED
External HOLD Input
Terminal
Front Panel HOLD Key
On
Off
On
Off
On
off
<Peak HOLD>
<Sample HOLD>

7-3. How to use comparison ouput function

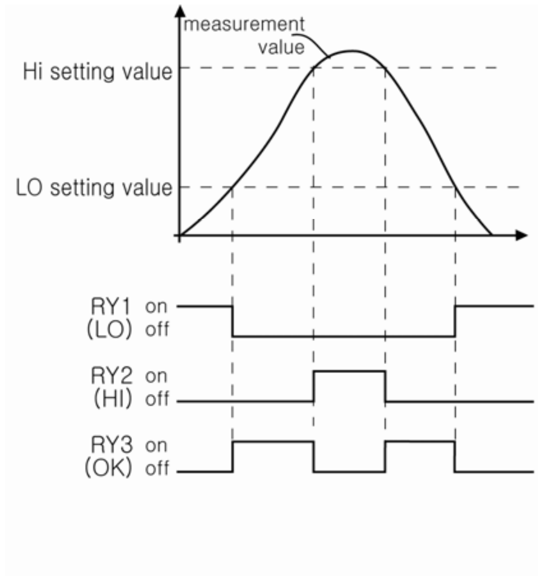
For comparison output function, there are 3 different modes such as Decision, High limit, Low limit. It displays through the relay of rear panel comparing each setup value. On High limit and Low limit mode, Hysteresis can be used.
To set up upper limit (High) and lower limit(Low), please use the key on the front panel.

1) Decision mode : Measured Value ≤ Lower limit setup value ⇒ RY1 ON (HI)
Measured Value ≥ Upper limit setup value ⇒ RY2 ON (LO)
Lower limit setup value < Measured value < Upper limit setup value ⇒ RY3 ON (OK)

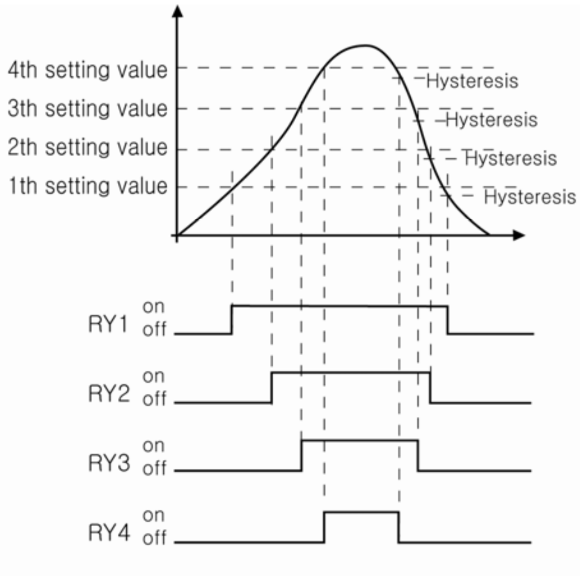
2) High limit mode : Measured Value ≥ RY1 setup value ⇒ RY1 ON
Measured Value ≥ RY2 setup value ⇒ RY2 ON
Measured Value ≥ RY3 setup value ⇒ RY3 ON
Measured Value ≥ RY4 setup value ⇒ RY4 ON
Measured Value < RY1 setup value − Hysteresis value ⇒ RY1 OFF
Measured Value< RY2 setup value − Hysteresis value ⇒ RY2 OFF
Measured Value < RY3 setup value − Hysteresis value ⇒ RY3 OFF
Measured Value< RY4 setup value − Hysteresis value ⇒ RY4OFF

3) Low limit mode : Measured Value ≤ RY1 setup value ⇒ RY1 ON
Measured Value ≤ RY2 setup value ⇒ RY2 ON
Measured Value ≤ RY3 setup value ⇒ RY3 ON
Measured Value ≤ RY4 setup value ⇒ RY4 ON
Measured Value > RY1 setup value + Hysteresis value ⇒ RY1 OFF
Measured Value > RY2 setup value + Hysteresis value ⇒ RY2 OFF
Measured Value > RY3 setup value + Hysteresis value ⇒ RY3 OFF
Measured Value > RY4 setup value + Hysteresis value ⇒ RY4 OFF

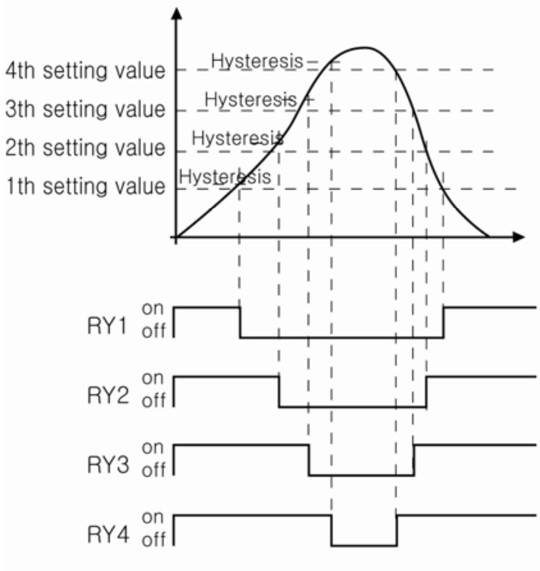
4) Low & High limit mode
Measured Value ≤ RY1 setup value ⇒ RY1 ON
Measured Value ≤ RY2 setup value ⇒ RY2 ON
Measured Value ≥ RY3 setup value ⇒ RY3 ON
Measured Value ≥ RY4 setup value ⇒ RY4 ON
Measured Value > RY1 setup value + Hysteresis value ⇒ RY1 OFF
Measured Value > RY2 setup value + Hysteresis value ⇒ RY2 OFF
Measured Value < RY3 setup value − Hysteresis value ⇒ RY3 OFF
Measured Value < RY4 setup value − Hysteresis value ⇒ RY4 OFF



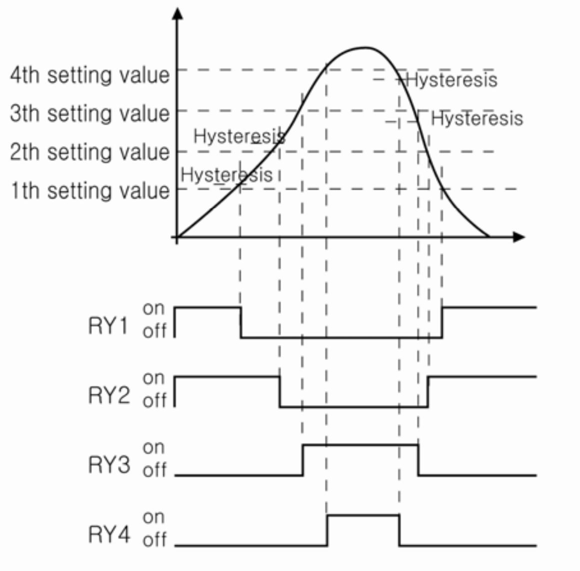
<Decision mode>



<High limit mode>



<Low limit mode>

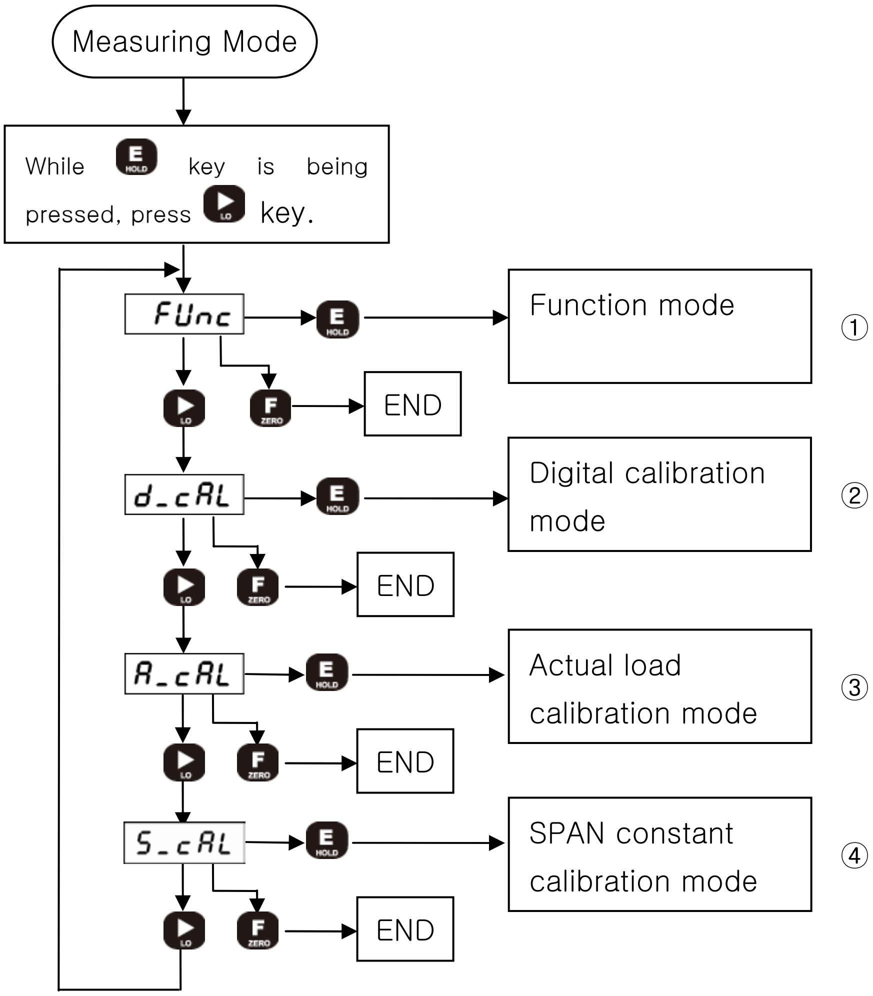


<Low & High limit mode>

8. Setting Modes

1) DN-10W, DN-50W

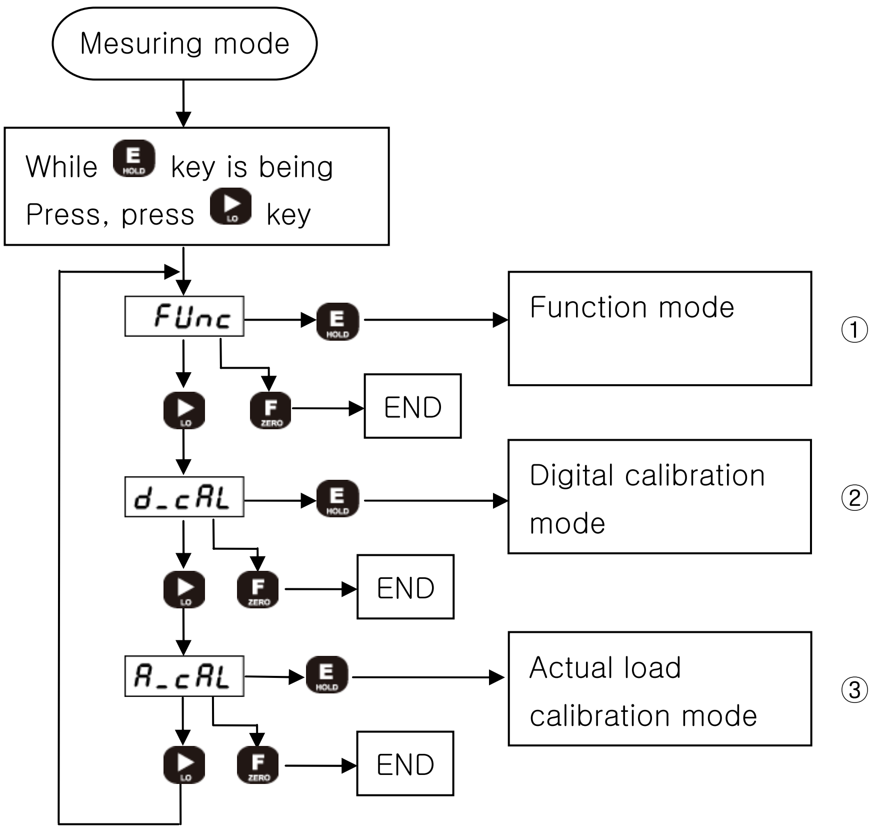
For Setting mode, there are 4 different types of mode such as Function mode, Digital calibration mode, Actual load calibration mode and SPAN constant calibration mode



① Function mode: Access to each function setup mode. Please refer 8-2 Function Mode.
② Digital calibration mode: It is to calibrate into the sensor's output value. No need to prepare for the actual load (standard weight). Please refer 8-3 How to calibrate.
③ Actual load calibration mode: It is to calibrate by adding the actual load (Standard weight or the load you know). Please refer 8-4 How to calibrate.
④ SPAN constant calibration mode: It is to calibrate with the S.CAL value written down for load calibration. Please refer 8-5 How to calibrate.

2) DN-20W

For setting mode, there are 3 different types of mode such as Function mode, Digital calibration mode, Actual load calibration mode.



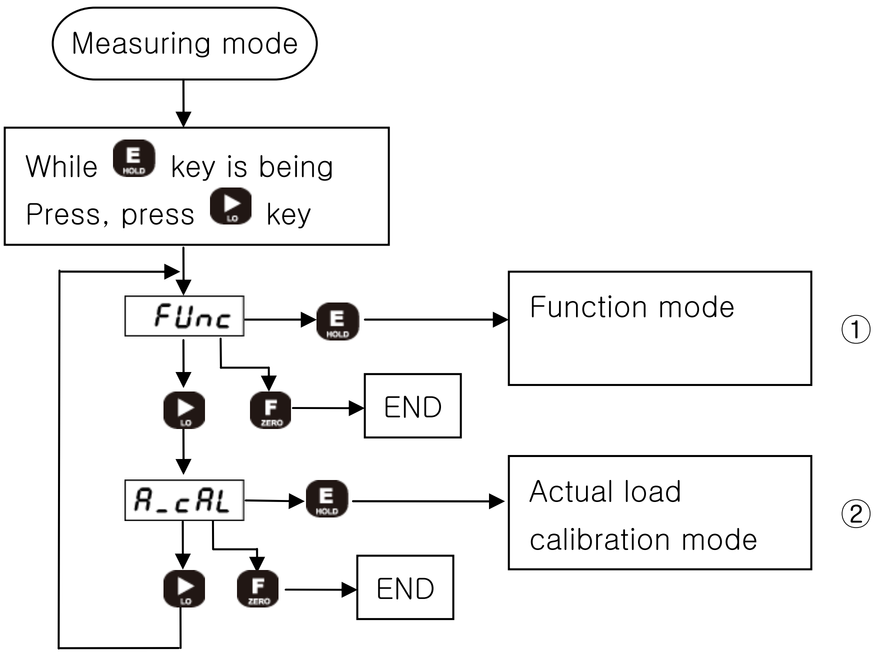
① Function mode
Acess to each function setup mode. Please refer 8-2 function mode.

② Digital calibration mode
It is to calibrate into the sensor's output value. No need to prepare for the actual load (stand weight). Please refer 8-3 how to calibrate.

③ Actual load calibration mode
It is to calibrate by adding the actual load (standard weight or the load you know). Please refer 8-4 how to calibrate.

3) DN-25W

For setting mode, there are 2 different types of mode such as Function mode, Actual load calibration mode.

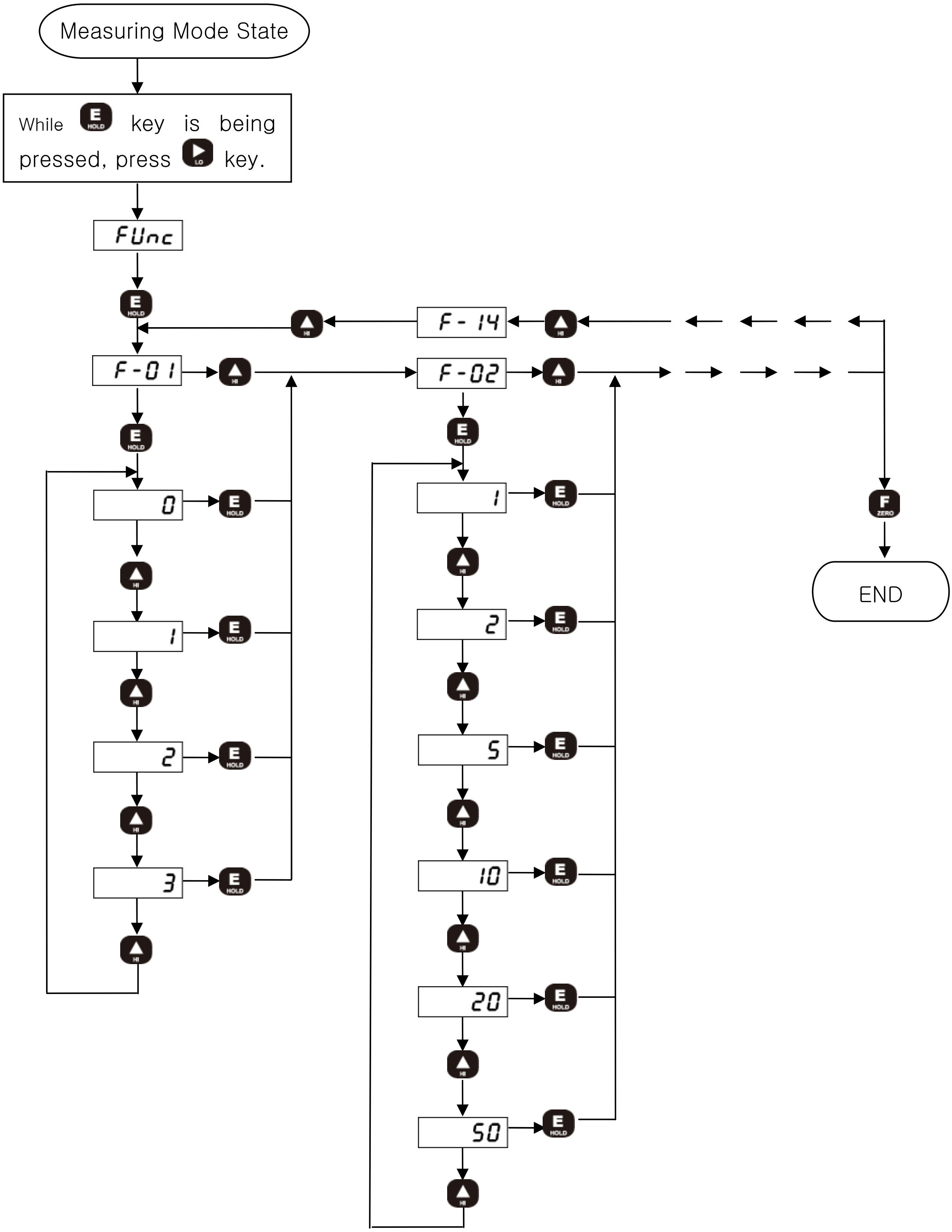


① Function mode
Acess to each function setup mode. Please refer 8-2 function mode.

② Actual load calibration mode
It is to calibrate by adding the actual load (standard weight or the load you know). Please refer 8-3 how to calibrate.

8-1. Function mode

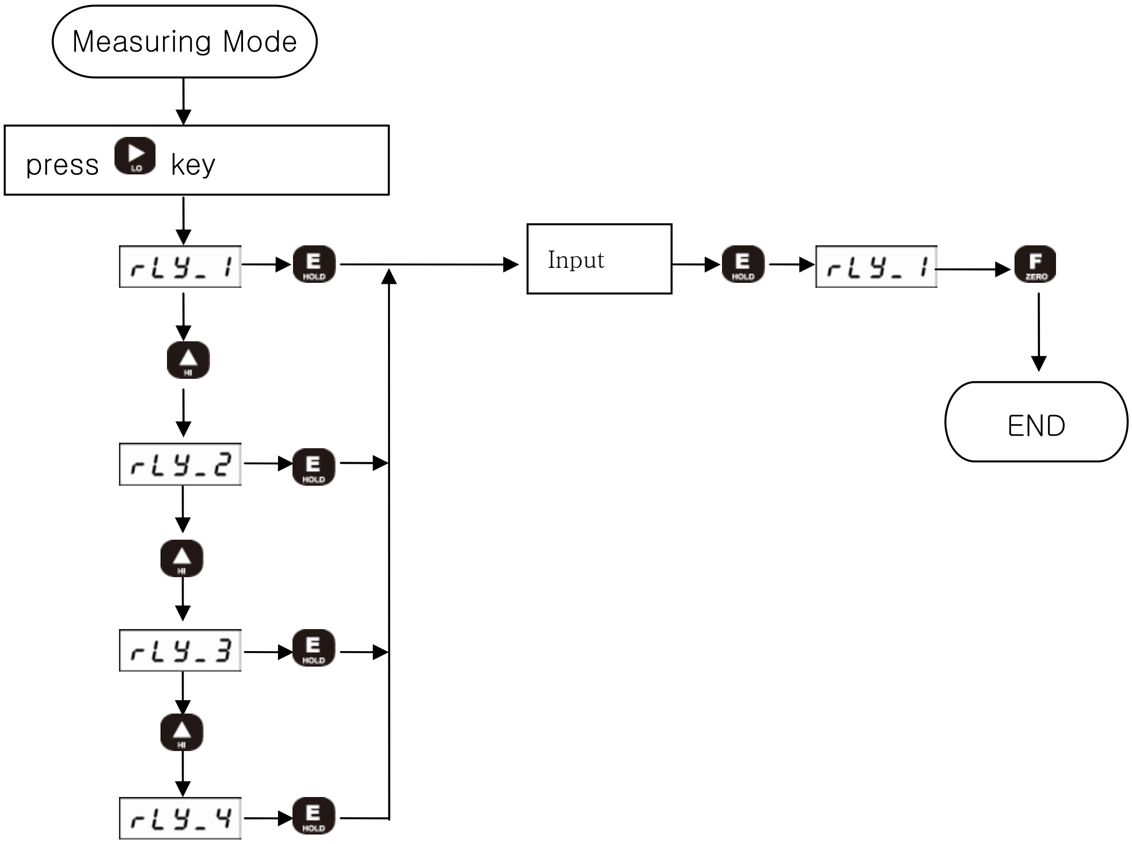
1) How to set function.



2) How to set RELAY data

① Decision mode (Decision mode : mode 0)

② Limit mode (Low & High limit mode: mode 1 ~ 3)



3) Function mode table

Function \ Model	DN-10W	DN-20W	DN-25W	DN-30W	DN-50W
F-01	O	O	O	O(Pulse)	O
F-02	O	O	O	O	O
F-03	O	O	O	O	O
F-04	O	O	O	O	O
F-05	O	O	O	O	O
F-06	O	O	O	O	O
F-07	O	O	O	O	O
F-08	O	O	O	O	O
F-09	O	O	O	O	O
F-10	O	O	O	O	O
F-11	O	-	O	-	O
F-12	O	-	O	-	O
F-13	O	-	-	-	O
F-14	O	O	O	O	O

Function mode list

Name	Function	Setting	출고시 기준설정값
F-01	Decimal point	0, 1, 2, 3	1
F-01 (DN-30W)	Pulse/circle	0 ~ 360	60
F-02	Division	1, 2, 5, 10, 20, 50	1
F-03	Display filter	0, 4, 8, 16, 32	16
F-04	Hold mode	Sample hold, Peak hold, Absolute peak hold	Peak hold
F-05	Comparison mode	Decision, High limit, Low limit, Low&High limit	Decision
F-06	Hysteresis	0 ~ 99	0
F-07	DAC zero	-19999 ~ +99999	0
F-07 (DN-50W)	DAC mode	Display DAC, High speed DAC	Display DAC
F-08	DAC capacity	-19999 ~ +99999	10000
F-09	ID Number	0 ~ 32	0
F-10	Baud rate & PRINT	2400, 4800, 9600, 19200, print	9600
F-11	Auto zero tracking	0 ~ 99	0
F-12	Auto zero tracking time	0.0 ~ 5.0 sec	0.0
F-13	Force unit	Kg(kg/㎠), N, ℓb, bar, MPa	Kg
F-14	Key Disabling	Zero key, Lo key, Hi key, Hold key	0000

F-01

1) Decimal point (Decimal point Set-up): DN-10W, DN-20W, DN-25W, DN-50W

(Standard setup value : 1)

Display data		
0	00000	: No decimal point
1	0000.0	: One decimal place
2	000.00	: Two decimal places
3	00.000	: Three decimal places

2) Pulse/circle (Set up Purse per circle) : DN-30W

(Standard setup value : 60)

Display data	Setting
0 ~ 360	It sets Pulse/1 circle of Rotary body detection sensor DN30W can set up Pulse number from 1 to 360.

F-02. Division (Minimum display unit setup)

(Standard setup value : 1)

Display data	Setting	
1	Displayed In 1	(0, 1, 2, 3, 4 …….)
2	Displayed in 2	(0, 2, 4, 6, 8 …….)
5	Displayed in 5	(0, 5, 10, 15 …….)
10	Displayed in 10	(0, 10, 20, 30 …….)
20	Displayed in 20	(0, 20, 40, 60 …….)
50	Displayed in 50	(0, 50, 100, 150 …….)

F-03. Display filter (Display speed setup)

(Standard setup value : 8)

Display data	Setting
0	No filter
4	Average time 1/8 sec
8	Average time 1/4 sec
16	Average time 1/2 sec
32	Average time 1 sec

F-04. Hold mode

1) DN-10W, DN-20W, DN-25W

(Standard setup value: 1)

Display data	Setting	
0	Sample Hold	: To hold the display value at the time of Hold signal input.
1	Peak Hold (+)	: To hold the maximum value of display values during Hold signal input.
2	Absolute Peak Hold(+/-)	: To hold the maximum absolute value of display values during Hold signal input.

2) DN-30W

(Standard setup value: 1)

Display data	Setting	
0	Sample Hold	: To hold the display value at the time of Hold signal input.
1	Peak Hold (+)	: To hold the maximum value of display values during Hold signal input.

3) DN-50W

Display data	Setting	
0	Display sample Hold	: To hold the display value at the time of Hold signal input.
1	Digital sample Hold	: To hold the A/D convertion value at the time of Hold signal input.
2	Diplay Peak Hold	: To hold the maximum value of display values during Hold signal input.
3	Absolute Peak Hold	: To hold the maximum absolute value of display values during Hold signal input.
4	Analog Peak Hold	: To hold the maximum value of sensor input during Hold signal input.

F-05. Comparision mode (Comparision output mode setup

(Standard setup value : 0)

Display data	Setting	
0	Decision mode	: Relay RY1(Lo), RY2(Hi), RY3(Ok) Output
1	High limit mode	: Relay RY1, RY2, RY3, RY4 output
2	Low limit mode	: Relay RY1, RY2, RY3, RY4 output
3	Low & High limit mode	: Relay RY1, RY2, RY3, RY4 output

F-06. Hysteresis

(Standard setup value : 00)

Display data	Setting
00~99	00 : Hysteresis – not used 01 ~99 : Hysteresis – used (Decision mode is not applied)

F-07. DAC mode

1) DAC zero (Analog output zero set up) : **DN-10W, DN-20W, DN-25W**

(Standard setup value: 0)

Display data	Setting
-19999~+99999	Analog output zero value set-up

2) DAC mode (**Analog Output mode setup**) : **DN-50W**

(Standard setup value : 0)

Display data	Setting		
0	Display DAC mode	Slow,	0
1	High speed DAC mode	Fast,	1

F-08. DAC capacity (Analog Outupt value setup)

(Standard setup value : 10000)

Display data	Setting
-19999 ~ +99999	To setup the rated capacity of analog output <Example of Setup value and output>

Setup Value		Voltage Output (0~10V)		Current Output (4 ~20mA)	
ZERO	CAPACITY	Display Value	Output	Display Value	Output
0	+10000	-10000	0V	-10000	4mA
		0	0V	0	4mA
		+10000	+10V	+10000	20mA
0	-10000	-10000	+10V	-10000	20mA
		0	0V	0	4mA
		+10000	0V	+10000	4mA

F-09. ID Number (Communication Device Number setup)

(Standard setup value : 00)

Display data	Setting
	00 : Device number is not set-up (Stream mode : always transmit data)

00~32	01 ~32	: Device number is set-up (Command mode : Transmit data by command)

F-10. Baud rate & Print (Communication Speed and print Setup)

1) DN-10W, DN-20W, DN-25W, DN-30W

(Standard setup value: 9.60)

Display data	Setting	Stream mode	Command mode
2.40	2400 bps	O	O
4.80	4800 bps	O	O
9.60	9600 bps	O	O
19.20	19200 bps	O	X
PRINT	PRINT DATA OUT (PT-100)	-	-

2) DN-50W

(Standard setup value : 9.60)

Display data	Setting	Stream mode	Command mode
2.40	2400 bps	O	O
4.80	4800 bps	O	O
9.60	9600 bps	O	O
19.20	19200 bps	O	X
38.40	38400 bps	O	X
57.60	57600 bps	O	X
PRINT	PRINT DATA OUT (PT-100)	-	-

F-11. Auto zero tracking (Auto zero operation range setup)

(Standard setup value : 00)

Display data	Setting
00 ≀ 99	00 : Auto Zero is not used. 01 ~99 : Set up the operation range of auto zero

F-12. Auto zero tracking time (Auto Zero tracking time setup)

(Standard setup value : 0.0)

Display data	Setting
00 ≀ 5.0	0.0 : Auto Zero is not used. 0.1 ~5.0 : Set up the auto zero operation time (0.1 ~ 5.0 sec)

F-13. Force unit (Conversion Unit setup)

(Standard setup value : 0)

Display data	Setting			
0	kg.f		kg/㎠	
1	N	kgf × 9.8	-	-
2	ℓb	kgf × 2.2	-	-
3	-	-	Bar	kg/㎠ × 0.98
4	-	-	MPa	kg/㎠ × 0.098

Note) During calibration, set up the unit you want after calibrating it into Kg.

F-14. Key disabling (Front key Locking setup)

(Standard setup value : 0000)

Display data	Setting
0 0 0 0 ← (4th digit)	Hold key Lock (1), Release (0)
3rd digit	Hi key Lock (1), Release (0)
2nd digit	Lo key Lock (1), Release (0)
1st digit	Zero key Lock (1), Release (0)
	<Set-up example> 1001 : Zero & Hold key Lock, Hi and Lo key Release

8-2. Digital calibration (Calibration by sensor output value)

1) DN-10W, DN-50W

At the time of purchasing sensor, the rated capacity (R.C) and rated output (R.O) declared on the calibration sheet can be used for the calibration for easier calibration.

Measuring Mode State

↓

While [E HOLD] key is being pressed, press [▶ LO] key.

↓

FUnc — Displays Function Mode State

↓ [▶ LO] ↓

d_cAL — Displays Sensor Output Calibration State

↓ [E HOLD] ↓

SEnS — Displays Rated Output value Input State

↓ [E HOLD] ↓

3.0000 — Input the rated output value by using [▶ LO] and [▲ HI] key. And then, press [E HOLD] key.

↓ [E HOLD] ↓

cAPA — Displays the rated capacity value Input State

↓ [E HOLD] ↓

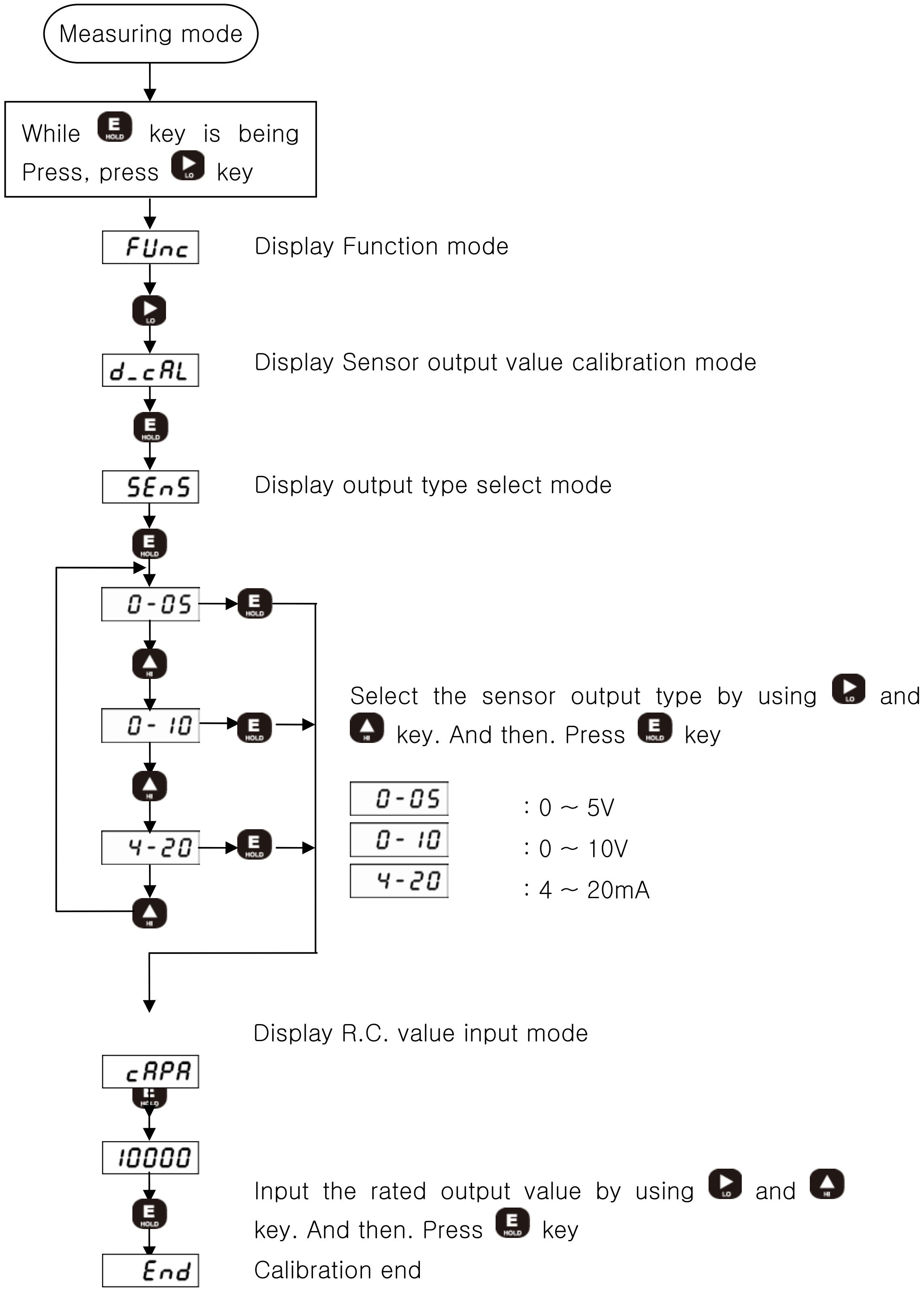
10000 — Input the rated capacity value by using [▶ LO] and [▲ HI] key. And then press [E HOLD] key.

↓ [E HOLD] ↓

End — Calibration Completed.

2) DN-20W

It will be able to calibration with output type and rated capacity setting.



8-3. Actual load calibration

1) DN-10W, DN-50W

This is a calibration method by adding actual load on the sensor. Standard weight is Needed.

Measuring Mode State

↓

While [E HOLD] key is being pressed, press [▶ LO] key.

↓

[FUnc] Displays Function Mode State

↓ [▶ LO]

[d_cAL] Displays Sensor Ouput Value Calibration State

↓ [▶ LO]

[A_cAL] Displays Actual Load Calibration State

↓ [E HOLD]

[SEnS] Displays the Rated output value input state

↓ [E HOLD]

[3.0000] Input the rated output value by using [▶ LO] and [▲ HI] key. And then, press [E HOLD] key. (Input 3.0000 if donot know the rated output of sensor)

↓ [E HOLD]

[ZEro] Displays Zero State
Press [E HOLD] key without adding any load on the sensor (Zero Emission)

↓ [E HOLD]

[-----] About 1 second later,

↓

[SPAn] Displays the acual load State

↓ [E HOLD]

[10000] Input the actual load (standard weight) by using [▶ LO] and [▲ HI] key. And then press [E HOLD] key.

↓ [E HOLD]

[UP] After adding the actual load (standard weight) on the sensor, press [E HOLD] key.

↓ [E HOLD]

[-----] After about 1 sec for display,

↓

[X.XXXX] Displays Shunt CAL Value (Please write to S.CAL)

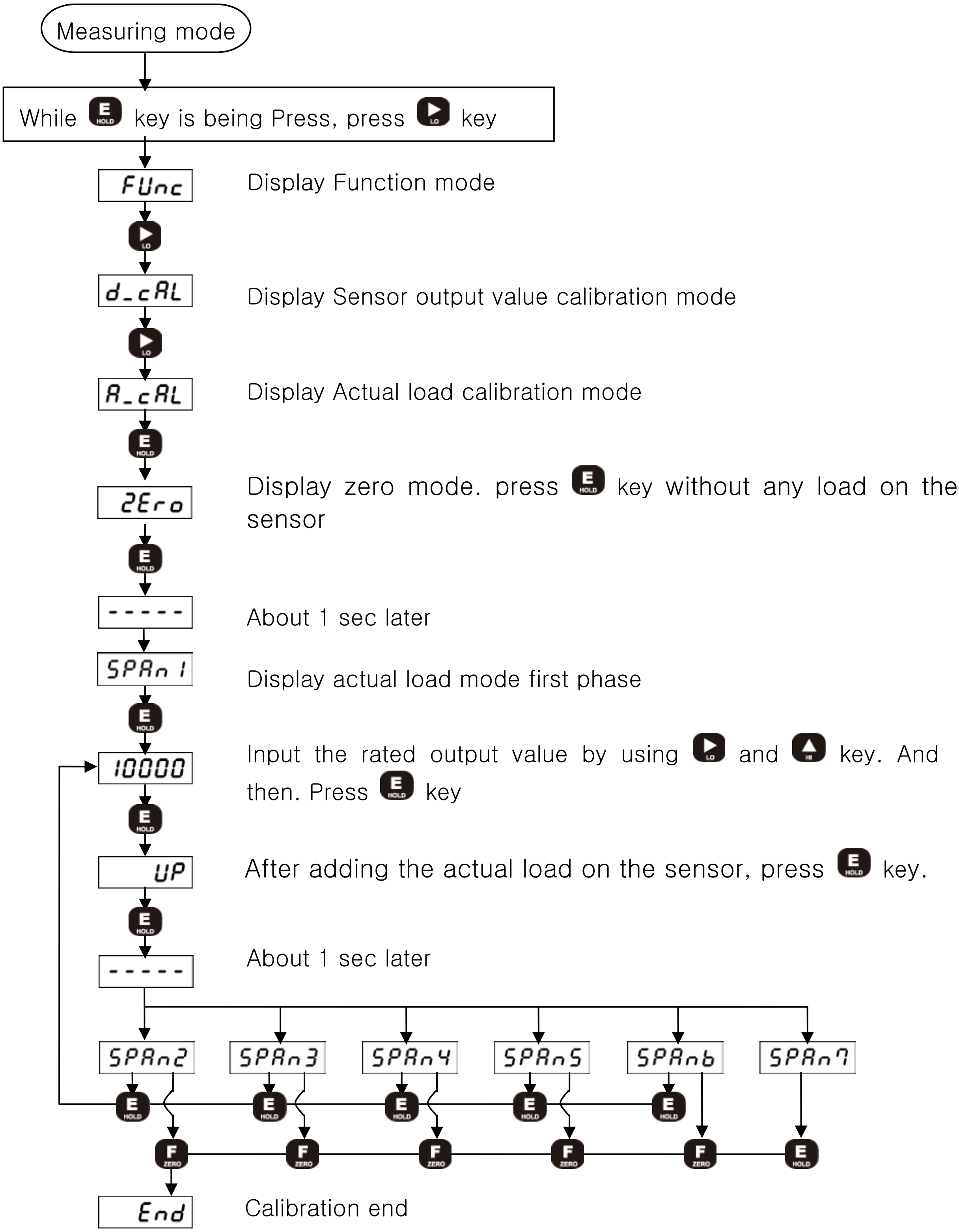
↓ [E HOLD]

[End] Calibration Completed.

DATE	Rated output	S.CAL

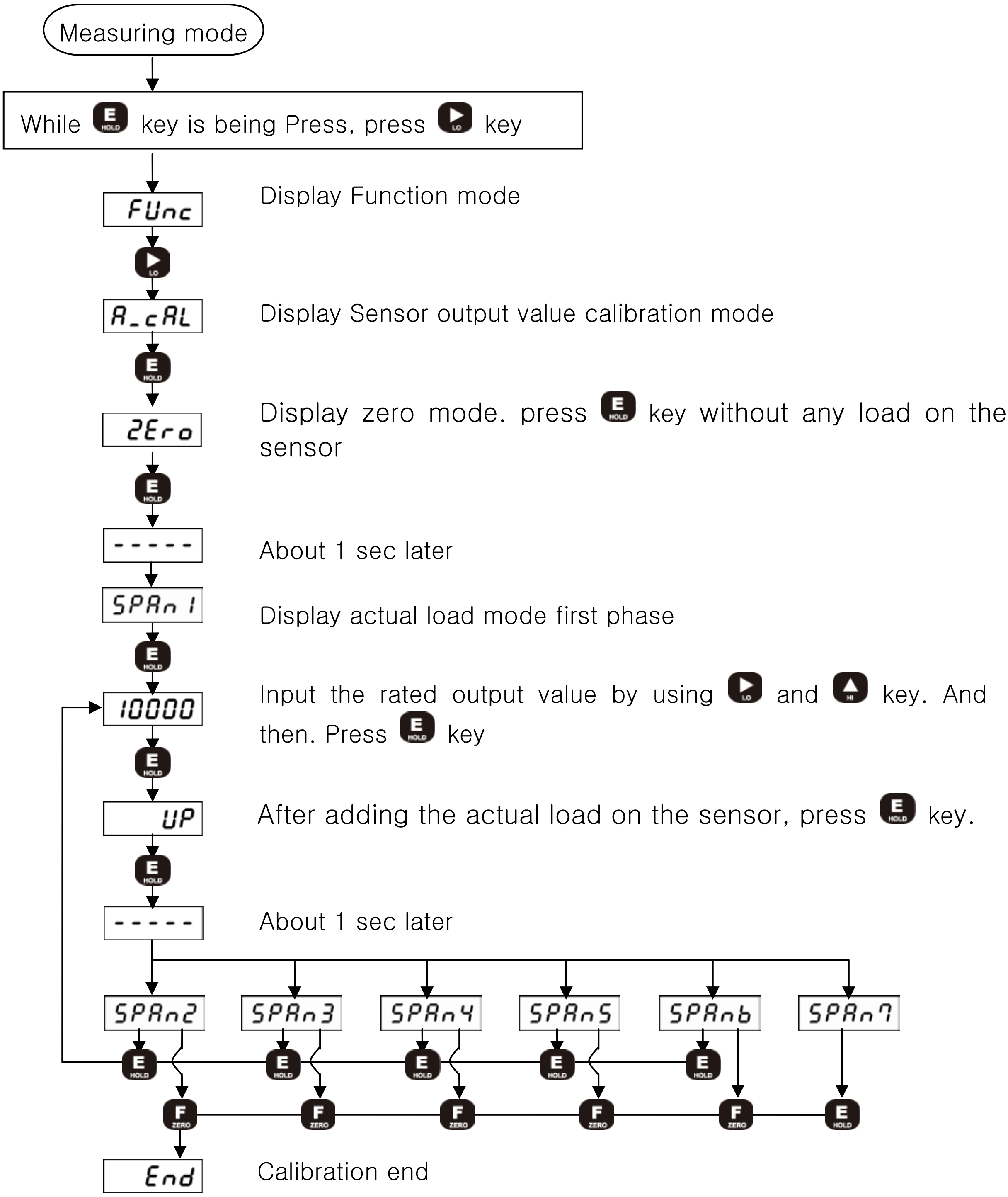
2) DN-20W

This is a calibration method by adding actual load on the sensor. Standard weight is needed. And this can calibrate 1~7 stages, and improve linearity of sensor.



3) DN-25W

This is a calibration method by adding actual load on the sensor. Standard weight is needed. And this can calibrate 1~7 stages, and improve linearity of sensor.



8-4. SPAN constant claibration (Calibratuib by Shunt CAL Value)

1) DN-10W, DN-50W

It is to calibrate with the S.CAL value written down for load calibration. You can calibrate without any standard weight.

Measuring Mode State

↓

While E (HOLD) key is being pressed, press ▶ (LO) key.

↓

FUnc — Displays Function Mode State

↓ ▶ (LO)

d_cAL — Displays Sensor Ouput Value Calibration State

↓ ▶ (LO)

A_cAL — Displays Actual Load Calibration State

↓ ▶ (LO)

S_cAL — Displays Shunt cal value Calibration state

↓ E (HOLD)

SEnS — Displays the Rated output value input state

↓ E (HOLD)

3.0000 — Input the rated output value by using ▶ (LO) and ▲ (HI) key. And then, press E (HOLD) key. (Input 3.0000 if donot know the rated output of sensor)

↓ E (HOLD)

uALU — Displays Shunt cal value input State

↓ E (HOLD)

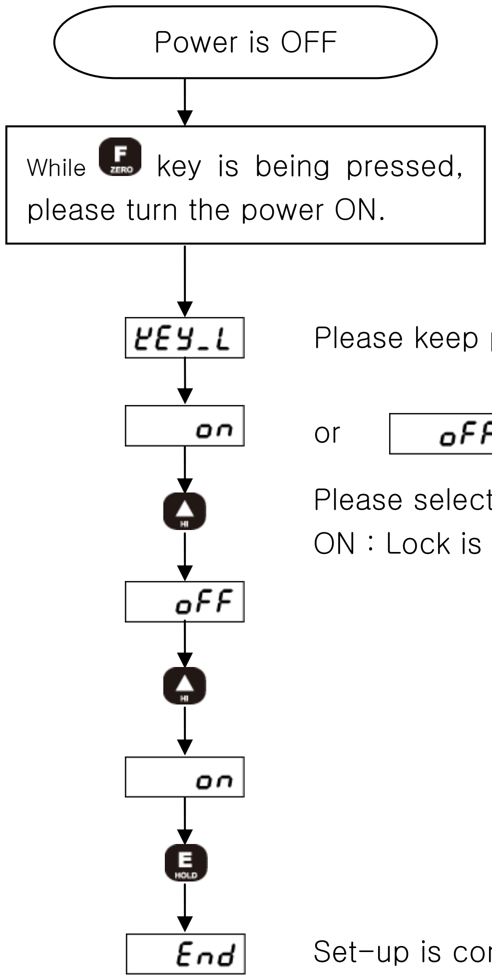
0.9876 — Input S.CAL value by using ▶ (LO) and ▲ (HI) key. And then press E (HOLD) key.

↓ E (HOLD)

End — Calibration Completed.

8-5 Lock Set-up

You can prevent any accidental operation due to the unnecessary key control by Lock set-up. After finishing calibration, it is recommended to set the Lock.
At the first stage, please start while the power is OFF.
Related Function when Lock is set : Function related to calibration.



Please keep pressing key while this is being displayed.

or oFF display

Please select lock or release by pressing key.
ON : Lock is selected, Off : Lock release is selected.

Set-up is completed.

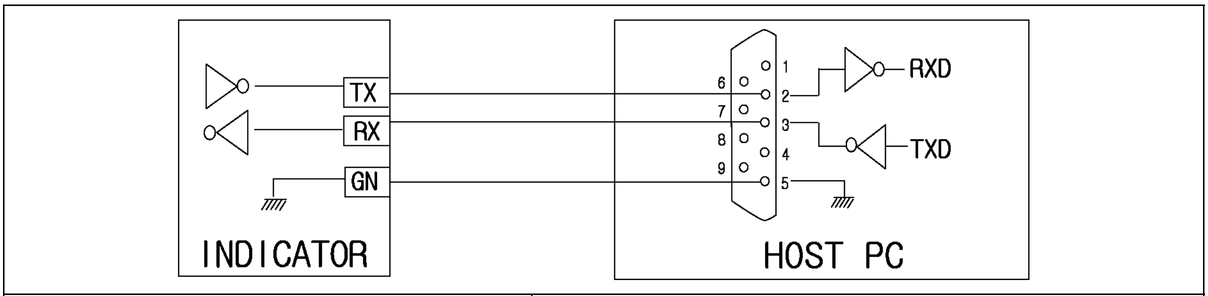
9. Product Inspection

Symptom	Cause	Action	Remark
When Display trembles.	• Load cell is damaged. • Load cell insulation resistance. • Indirect occurrence	• Load cell input, output. • Check resistance • Check load cell's insulation resistance.	• Insulation resistance (Cable & Case > 1000 Mohm)
When weight goes up at a regular ratio or zero returns are not made.	• Loadcell faulty	• Check load cell's insulation resistance.	
	• Loadcell connection is insufficient.	• Check the wiring between load cell and the main device. • Check the load cell's calbe's disconnection.	
When weight changes into (−).	• Loadcell wiring is reversed.	• Check load cell's ouput cable connection.	• Output : (+SIG) (−SIG)
Displayed as "OVER" or "UNDER"	• Load cell is damaged. • Load cell connection is bad.	• Check the load cell's condition and calbe connection.	

10. OPTION

#Option-02 (RS232C)

Since RS232C Interface is very sensitive of electric noise. So please do the wiring from AC Power and electric wires separately. Also you must use the shield calbe always.



Indicator	Host PC
TX(Transmission Data)	RXD(Receive Datea), No.2 Pin
RX(Receive Datea)	TXD(Transmission Data), No.3 Pin
GN(Ground)	GND(Ground), 5 Pin

1. TYPE : EIA-232C
   Method : Half-duplex, asynchronous method.
2. Baud-rate : Select one of 2400, 4800, 9600, 19200, 38400, 57600bps
3. Parity : No Parity
4. Data bit : 8 bit
5. Stop bit : 1bit
6. Stream mode (Ex. Data +1234.5 transmission)

CODE	BYTE1	BYTE2	BYTE3	BYTE4	BYTE5	BYTE6	BYTE7	BYTE8
ASCII	S	T	,	N	T	,	+	0
HEX	53H	54H	2CH	4EH	54H	2CH	2BH	30H

CODE	BYTE9	BYTE10	BYTE11	BYTE12	BYTE13	BYTE14	BYTE15	BYTE16
ASCII	1	2	3	4	.	5	CR	LF
HEX	31H	32H	33H	34H	2EH	35H	0DH	0AH

1) BYTE1, BYTE2

. DATA Stable : S T . DATA Unstable : U S

. DATA OVERFLOW : O L . DATA UNDERFLOW : U L

2) BYTE3 ~ BYTE6 : fixed character (, N T ,)
3) BYTE7 ~ BYTE14 : DATA 8 BYTE (including +/-)
4) BYTE15 : CARRIAGE RETURN
5) BYTE16 : LINE FEED

7. Command mode : Please setup as RS485 mode and use.(Refer to OP-03:RS485)

#Option-03 (RS485)

Since RS485 Interface is very sensitive of electric noise. So please do the wiring from AC Power and electric wires separately. Also you must use the shield calbe always.

1. TYPE : RS485
2. Method : Half-duplex, asynchronous method
3. Baud-rate : Select one of 2400, 4800, 9600bps
4. Parity : No Parity
5. Data bit : 8 bit
6. Stop bit : 1bit

Please set up the device No. referring to INDICATOR Manual.
(Can setup from 1 to 32 channel.)

7. Command Form (PC -> INDICATOR)

CODE	BYTE1	BYTE2	BYTE3	BYTE4	BYTE5
ASCII	I	D	0	1	P
HEX	49H	44H	30H	31H	50H

1) BYTE1, BYTE2 : Fixed Charactor (ID)
2) BYTE3, BYTE4 : Device Number (1 ~ 32)
3) BYTE5 : Command Order (P, H, R, Z)

8. Command Chart

Command		Description
ASCII	HEX	
P	50H	Transmit the current value of order equipment.
H	48H	Hold for order equipment.
R	52H	Release hold for order equipment.
Z	5AH	Operate the current value of order equipment as ZERO.

9. Transmission Data Form (INDICATOR -> PC)

CODE	BYTE1	BYTE2	BYTE3	BYTE4	BYTE5	BYTE6	BYTE7	BYTE8
ASCII	I	D	0	0	1	,	+	0
HEX	53H	54H	30H	30H	31H	2CH	2BH	30H

CODE	BYTE9	BYTE10	BYTE11	BYTE12	BYTE13	BYTE14	BYTE15	BYTE16
ASCII	1	2	3	4	.	5	CR	LF
HEX	31H	32H	33H	34H	2EH	35H	0DH	0AH

1) BYTE1, BYTE2 : Fixed Charactor (ID)
2) BYTE3 ~ BYTE5 : Device number (1 ~ 32)
3) BYTE6 : Fixed Charactor (,)
4) BYTE7~BYTE14 : DATA 8byte (Including +/-)
5) BYTE15 : CARRIAGE RETURN
6) BYTE16 : LINE FEED